SECTION 900.00 – PROCESS

SECTION 901.00 – RESEARCH POLICY

901.01 Idaho Transportation Department Research Policy. It is the policy of the Idaho Transportation Department to encourage the advancement of knowledge through research. This research will have as its primary objectives:

- To reduce accidents and accident severity
- To reduce the costs of design, construction and maintenance while improving the quality of the product
- To improve the quality of service
- To increase the efficiency of planning, operations and administration

The Department recognizes the benefits, which may result from research and assigns a high priority to research so these benefits may be realized at the earliest possible time. **The implementation of the knowledge gained through research is a primary goal.**

Research work may be carried out through a number of national or regional programs as well as by Universities, consultants, or by Department personnel.

National and regional programs include: The National Cooperative Highway Research Program (NCHRP), Transit Cooperative Research Program (TCRP), National and Regional Pooled Fund Studies, Special programs such as FHWA Category 2, Intelligent Vehicle Highway System (IVHS) or Strategic Highway Research Program (SHRP).

Contract research may be performed by consultants, Universities or the Idaho National Engineering Laboratory (INEEL). Research may also be performed by Department personnel. Research within the Department will normally be staffed by personnel having primary responsibility for the area of the work involved.

901.02 Research Definition. Research is concerned with the advancement of knowledge. Many classifications have been defined, but for purposes of orienting the quest for knowledge or solving of problems, research can be basically divided into the following types:

- Theoretical or Basic Research - A systematic investigation endeavoring to obtain a fuller knowledge of natural or socioeconomic phenomena.
- Applied Research - A systematic investigation to learn how knowledge can be applied to the solution of a problem.
- Development Studies - A study to translate knowledge or research results into materials, devices, or techniques for the practical solution of a specific problem.

- Evaluation Studies - A study to measure, test, and evaluate the performance of new developments under operating conditions.

- Other studies that do not fit into any of the above classifications may, in fact, be research. These can be the collection of data on practices, procedures of similar activities, or the demonstrations and improvement of new devices or techniques.

SECTION 902.00 – AUTHORITY TO DO RESEARCH

902.01 Line of Authority. The authority to do research comes from the Idaho Transportation Department Director, acting through the Research Advisory Committee (RAC) and the Research and Assistant Materials Engineer (Research Engineer).

902.02 Research Mission. To manage internal and external research programs and projects and to disseminate information.

In support of the research mission, the following are the objectives:

- To produce and maintain a Department research work plan (Part II of the State Planning and Research (SPR) Work Plan).

- To assist the Department in identified research activities.

- To edit and publish research results.

- To coordinate and monitor the implementation of indicated new methods, procedures or resources.

SECTION 903.00 – RESEARCH RESPONSIBILITIES

903.01 Research Engineer. The Research Engineer, under the direction of the Materials Engineer is responsible for coordinating the Department's research activities: implementing decisions as they pertain to research; assisting in and stimulating research efforts; and providing assistance in writing, editing and reporting the results of research within the Department and from work of others. Functions include:

- Chair the Department's Research Advisory Committee

- Review all research proposals and obtain information required to formulate a research program

- Provide continuous liaison and monitor progress and expenditures for all projects

- Maintain the Research Library in the Operations Annex, and conduct literature searches and research as requested

- Provide liaison with the Federal Highway Administration, universities, consultants and other agencies conducting and supporting research for the Department. (Note: Liaison with the Idaho Transportation Consortium is the responsibility of the Department Traffic Engineer, who is the Vice- Chairman of the Research Advisory Committee.)

- Develop submittals to the Research Advisory Committee and to the Transportation Board regarding the research program

- Serve on committees of departmental, regional or national associations or boards as authorized

- Develop the annual State Planning and Research Work Plan, Part II, Research with the approval of the Research Advisory Committee

- Submit annual performance and expenditure report to FHWA within 90 days after the end of the program year which includes as a minimum:

    1. Comparison of actual performance with established goals

    2. Progress in meeting schedules

    3. Status of expenditures in a format compatible with the work program, including a comparison of budgeted amounts and actual costs incurred and cost overruns or underruns.

    4. Approved work program provisions

    5. Other pertinent supporting data (Events that have significant impact on the work program will be reported as soon as they become known.)

903.02 Research Advisory Committee. The Research Advisory Committee was formed with the approval of the Department Director to assist in and oversee the development of the research program, and to review and prioritize the research problem statements, pooled fund studies and NCHRP proposed projects. The Research Advisory Committee consists of seven (7) permanent members from Operations and Planning and four (4) rotating members. The FHWA Division research contact person sits as an ex - officio member. The permanent positions include the Research and Assistant Materials Engineer (Chair), Traffic Engineer (Vice Chair), the Planning Division Director (or designated representative), and Section Heads or designated representatives from, Maintenance, Bridge, Design and Environmental Sections. Rotating members will typically serve for three (3) years, and may represent any area of the Department; except that one member must represent Executive Management, and one represent District management.

The Research Advisory Committee functions include:

- Review and prioritize research problem statements

- Assist in determination of the appropriate research agency for individual projects

- Provide input into the NCHRP ballot

- Review and approve participation in pooled fund studies

- Recommend methods of implementation for completed research studies

903.03 Technical Oversight Committees. A technical oversight group or committee will be established for each research project by a designated member of the RAC. The oversight committee will be composed of from four (4) to five (5) individuals who are particularly knowledgeable in the subject area of the proposed research. In most cases at least one member of each oversight committee should be from the District. A member of the Research Advisory Committee should be included in each oversight committee. The appropriate individual from the FHWA Division shall be included on the committee.

The functions of the Technical Oversight Committee include:

- Working with the research agency to develop the scope of work and budget for the proposed research
- Monitoring the technical aspects of the research and developing changes in scope of work, if appropriate, to achieve the intent of the proposal
- Reviewing and accepting the progress and final reports
- Providing the second review of all invoices submitted by the research agency
- Recommending methods of implementation of the completed research to the Research Advisory Committee

903.04 Responsible Unit. For contract or external research, the Technical Oversight Committee is the responsible unit. The unit is responsible for monitoring and approving the research. The Research Engineer will act as the Agreement Administrator.

For internal research, the responsible unit is the section or district assigned to conduct or supervise a research project or special study. The unit is responsible for the progress and technical adequacy of the research and management control of research expenditures, and for providing such reports as may be required. The responsible unit also has primary responsibility for evaluating the completed research and recommending implementation.

SECTION 904.00 – RESEARCH PROPOSALS

904.01 Proposal / Problem Statement Information. A research proposal must have been given sufficient thought and study to assure a problem exists, what the objectives of the research are, how the research should be undertaken, and the urgency of the research. Section 904.03 describes in detail the steps to be taken in evaluating a research proposal and selection of a project.

Employees of the Department are encouraged to submit proposals or problem statements. It is recognized that proposals cannot be fully described by each individual, but with cooperation of supervisors at all levels, any proposal having merit will be supported with facts and data sufficient to give it fullest consideration.

A request for proposals or problem statements will be transmitted to all Headquarters Sections and to all Districts, as well as to Universities and the INEEL, in April or May of each year. In order to develop contract research agreements in October, the research program must be presented to the Transportation Board not later than the September meeting. To meet this schedule, research proposals / problem statements should be submitted to the Research Engineer by the end of June each year.

An example problem statement form is contained in the Appendix. The following list of definitions should assist in the development of problem statements:

- The Problem - A brief statement describing the problem or problem area to be investigated or items to be evaluated or developed, and the need for the proposed work.

- Objectives - A detailed and specific statement of the objectives and goals of the research. The objectives, together with the problem statements, should indicate why the research is needed. The objective should define the area to be benefitted and how the results can be applied.

- Current Activities - In this section, identify any research in progress that you are aware of which relate to the problem. Also make a brief statement concerning related research, but do not prepare a reference list. The Materials Section will perform a literature search, including a search of TRIS, for each problem submitted.

- Urgency - Provide a statement concerning the urgency of this particular research in relation to the needs of the Department, and how the research findings might be implemented.

- Cost - Provide a general estimate of cost to accomplish the research.

- Duration - Estimate the time required to complete the research.

A more detailed proposal is needed to develop in - house research projects. In addition to the above outline, this proposal should include information on the following:

- Scope - Describe the general approach to the project and the type of research needed. Emphasize important phases and set limits.

- Procedures - Describe research procedures indicated or known to be applicable. Research of the literature and other work will be necessary before any detailed procedures can be set forth.

- Implementation - The implementation statement should clearly state how the results might be applied. It should specify what changes are needed in policies, procedures and specifications or design methods.

- Personnel - The proposal should include the numbers and technical level of the people available, who would be assigned to do the research, along with their experience, capabilities, and interest in the project.

- Facilities and Equipment - Describe the facilities available, including present equipment and equipment which will be required.

- Funding - Provide a breakdown of the estimated cost, including supervision, capital outlay, supplies, travel, etc.

As a minimum, it is suggested that any problem statement or proposal submitted have the problem, objectives and scope described. Refer to the Appendix for samples of a research proposal and problem statement.

904.02 Research Proposal / Problem Statement Submittal. Submittals from employees should follow normal channels of communication. Recommendations of the District Engineer, Chief Engineer, Bureau Chief or Section Supervisors are desirable.

Each proposal / problem statement shall be forwarded to the Research and Assistant Materials Engineer, who will perform literature searches and prepare a document containing all submitted proposals for review by the Research Advisory Committee. All proposals / problem statements should be submitted prior to June 30, each year for consideration in the current year's research program.

In - house research may be undertaken by any of the Department's divisions, bureaus, sections or districts. Research may involve materials, equipment, procedures, techniques, traffic, land use, economic studies, environmental studies and planning in any phase determined as needing research by the Department.

904.03 Research Proposal Evaluation and Selection. Criteria must be established to determine if any proposal is in fact research or if merely a problem requiring application of current knowledge. General criteria to select research projects relating to the character of the proposed work are as follows:

- Is the study, investigation, or evaluation directed to a problem?
- Are the potential benefits to be attained sufficient to make the investment in time and money worthwhile?
- Is the study a duplication of work already done? Is there any material difference between the proposed work and that already accomplished
- Or underway? Are climate or other localized conditions sufficiently important to warrant repetition?
- Will the research results produce methods, devices, or knowledge directly applicable to a specific problem?

The Research Advisory Committee will establish priorities on all research projects.

When the project proposal has been determined to be acceptable on the basis of its significance, it shall be further evaluated to determine that the study offers a reasonable possibility of producing definitive results.

Two items, which must be considered in the evaluation, are technical adequacy and management competence brought to bear on the research problem.

The technical adequacy of a research proposal can be measured by careful evaluation as follows:

- Is the problem or development clearly defined? Are the underlying principals valid, and is the research and /or development sufficiently advanced to warrant development or evaluation?

- Are possible solutions defined or is a plan and criteria specified to measure, test, and evaluate developments?

- Are the variables clearly defined and are conditions realistic for evaluation?

- Are experimental and/or test facilities adequate?

- Are data analysis procedures appropriate and adequate?

Management competence depends upon the technical and management competence applied to the project. Several capabilities must be evaluated as follows:

- Does the Principal Investigator have the technical competence and/or experience appropriate for the level of complexity of the study?

- Are the total staff requirements, including funding, realistic? Do the staff members have adequate time to devote to the project?

- Are the duration and phasing of the project study realistic and adequate?

- Are the necessary funds available to finance the project?

Technical competence is required if the project is to be successful. The principal investigator must have either specialized training in the field to be studied or have sufficient experience to be well informed on the problem. The Principal Investigator must have the necessary creative ability to break the problem down into manageable elements. He or she must also have a thorough understanding of the practical problems involved as well as approaches to the solution. In addition, the Principal Investigator should have the capability of analyzing the work (including statistical evaluations) and of writing procedures, findings, etc.

Subordinate personnel should be good technicians, well trained in fields related to the research.

Continuity of personnel assigned to a project is important. The Principal Investigator and the primary assistants directing the project should expect to be able to devote their major efforts to completion of the project and should expect to remain with the project until it is completed.

The above criteria apply to either internal or external contract research.

904.04 Considerations in Assignment of Research Projects. Several factors need careful consideration before assigning project responsibility. These are as follows:

- The type of research to be undertaken: theoretical (basic), developmental, applied, evaluations, etc. Normally theoretical research is undertaken by the universities and/or national laboratories, and is typically long term. Applied research and developmental studies may often be more appropriately conducted by universities or consultants, but may be undertaken by the Department as well. Evaluation of products, projects and methods would normally be done by Department personnel. The use of other governmental agencies, with specialized knowledge and experience, should be given consideration when appropriate.

- The availability of personnel within the Department, universities, consultants and other agencies is a definite consideration. Employees who have full-time responsibilities other than research

often cannot devote sufficient time to carry a project through to completion satisfactorily. The personnel to staff a project, their available time, education and experience should be known. The principal researcher and primary assistants' qualifications are to be reviewed prior to assignment.

- The availability of equipment and other facilities. Each final proposal shall indicate space and equipment requirements. Any new equipment to be purchased is to be listed indicating price, if known.

Assignment to the universities, the Consortium, consultants or government agencies should depend on the nature and complexity of the research and on the capabilities of the organization to perform the research. Assignment of personnel within the organization should be left to these organizations. However, prior knowledge of the Principle Investigator and his or her background is desirable.

While the capability to do basic or theoretical research is available, either through the universities, or more specifically through the Idaho Transportation Consortium, the bulk of the contract research will be of the applied nature. That is, the research is intended to provide solutions, which can be implemented quickly.

Assignment shall be made by letter within the Department or by completion of a contract agreement when dealing with outside organizations or agencies.

SECTION 905.00 – RESEARCH FUNDING

905.01 Federal Aid. The Department annually provides an item in the budget for research, and programmed research studies are funded from this item.

The Intermodal Surface Transportation Efficiency Act (ISTEA) of 1992 requires that two (2) percent of all federal highway apportionments be spent on planning and research. These planning and research funds are designated SPR funds and with some exceptions must be matched by 20 percent state money. Further, the act requires that 25 percent of the planning and research funds be spent on research. Most of the Department's research effort is aided by funds from this source. Administration of SPR funds is in accordance with 23 CFR Part 420.

Of the SPR funds, 5 1/2 percent is paid out for the support of the National Cooperative Highway Research Program (NCHRP). This item and the annual payment to the Transportation Research Board as the Department's dues are paid from the 25 percent of the SPR program designated for research. The NCHRP payment and TRB dues do not require a State match.

An additional external research program, funded 100 percent by the SPR research funds, is the Federal Highway Administration (FHWA) Pooled Fund Program. This program is funded by pooling individual state contributions to finance a research and/or development project, which has national significance. Potential projects are submitted by the individual states and developed by the FHWA technical staff. Contributing states have input into the technical progress.

Regional pooled fund projects may be initiated by individual states, to study problems with more limited, or local, significance. Regional pooled fund studies may also be financed with 100 percent SPR research funds. These regional studies are usually administered by a "lead" state in cooperation with other interested states. (See appendix for National and Regional Pooled Fund Procedures).

Construction projects may incorporate experimental features financed by federal funds in accordance with The Federal-Aid Policy Guide, Section G 6042.4. These projects may be categorized, based on funding, as follows:

- Category 1 - Construction projects incorporating an approved SPR study financed with SPR funds where provision is made for tests, measurements, instrumentation, observation, analysis, and reporting.

- Category 2 - Construction projects incorporating experimental features, which normally require a minimum of advanced planning, with moderately controlled conditions and without instrumentation, where observations are limited to a visual comparison between experimental and control sections. These could include demonstration type features involving items unique to present construction methods and practices. Category 2 projects must be cleared with the Division Administrator of the Federal Highway Administration before the work is undertaken. For control purposes, the Materials Section will assign a project number. This number will be six (6) digits: ie. 94 - 04 - 43 or 94 - 12 - 06. The first two digits specify the year the project started. The second two digits represent the sequential project number. The last two digits indicate the section or district, which is responsible for the project. Federal research funds may only be used for evaluation of these projects, not construction or maintenance.

- Category 3 - A plan describing the objectives of the demonstration and the means by which the objectives are to be met.

In order to make the best use of the limited research funds available, the research program will be composed mainly of projects having a high probability of early payoff in contributing to the solution of specific and important problems being experienced by the Department.

905.02 State Funding. Funds for research projects may be provided from the State Transportation Fund without Federal Aid. State funded research would typically be composed of projects consisting primarily of short-term product or method evaluations. Depending on the complexity and duration of the project, reporting might vary from formal published research reports to unpublished, special reports. Establishing a state funded research project for more than $25,000 requires Transportation Board approval. Contract research may also be state funded, but would be limited to projects not eligible for SPR funding or in cases where SPR funds are either not available or not adequate.

SECTION 906.00 – DEPARTMENT RESEARCH (IN-HOUSE)

906.01 General. Most Department research shall be conducted by units within their specialty areas. With this arrangement, it is anticipated that more usable problem solutions will result and better implementation will be made of the results.

906.02 Personnel. Personnel assigned the responsibility for the conduct of research projects should be thoroughly familiar with the Department's operations relating to the project.

Training in research techniques is desirable. Such knowledge and training can be obtained by rotating the most capable personnel between research projects and operational responsibilities. This practice should also serve to encourage implementation of research findings in the future.

A Principal Investigator (or co-Principal Investigator) on a research project should be permitted to devote the major portion of his or her time to the conduct of the project if the nature of the project permits continuous work.

The Principal Investigator is to be considered as responsible for the technical direction of the project, including personnel assigned as assistants. The head of the responsible unit is responsible for providing support to permit satisfactory progress.

906.03 Conduct of the Research Project. The research project should be conducted following a definite and detailed plan as outlined in the proposal and final approved work plan. Variation from the plan or an enlargement of the scope of the project should not be proposed unless it has been definitely determined that the original work plan will not realize the project objectives. Significant variations from the original work plan must have the approval of the project Technical Oversight Committee and the Research Advisory Committee.

Some pitfalls to be avoided in the conduct of a research project are as follows:

- Staffing with personnel who do not understand both the academic and practical view points
- Omitting the necessary literature search. (Should precede any active research work)
- Lack of planning
- Failure to develop a work plan in detail and to revise the plan as necessary
- Letting the project grow as it progresses
- Failure to establish statistical controls
- Letting preconceived notions influence analysis and conclusions
- Burying the new knowledge in a voluminous report of statistical and technical details

906.04 Equipment and Supplies. The rental or purchase of equipment required in the conduct of a research project is an allowable charge against the project to the extent defined below.

On a state-funded project, the entire cost of equipment rental for the period during which the equipment is used on that project is a legitimate project charge. When equipment is purchased, only the depreciation during the project period is an allowable project charge.

On federally supported projects, the same requirements as for state projects are applicable with some additions. For example, under some conditions, prior FHWA approval is needed to assure federal participation in equipment costs exceeding $ 5,000. Refer to 49 CFR 18.32(b) when planning an FHWA supported research project requiring equipment purchase or rental. Acquisition and disposition of supplies will be in accordance with 49 CFR 18.33.

906.05 Monitoring the Project. Progress of the project shall be monitored by the District Engineer or Section Supervisor of the responsible unit or by a technical oversight committee established for the project. Reviews of the project shall include a determination that the project is

directed toward the objectives set forth, and that adequate supervision and personnel are assigned to permit project completion.

The Research Engineer will monitor the project administratively. The principal concern will be that the project direction and support is adequate, progress is satisfactory, and that the project is following the work plan.

SECTION 907.00 – CONTRACT RESEARCH

907.01 General. When the Department does not have the necessary personnel or equipment available, the performance of research projects by universities, other public agencies, or consultants shall be considered. The Department participates in an annual cooperative research program with the University of Idaho, Civil Engineering Department. The Idaho Transportation Consortium (ITD, NCATT, INEEL, and FHWA) is also an available resource for contract research.

Performance of a research project by organizations outside the Department will be covered by a contract or agreement, which is prepared and processed by the Research Engineer. This agreement follows a standard form (see appendix) developed by the Department and approved by FHWA and the Department's legal staff for agreements all or partially financed with federal funds. Procurement of property and services for these projects will be in accordance with 49 CFR 18.36(a) and, if applicable, 18.36(t). A similar agreement form is used for contracts financed with other funds. Performance of the work will be in accordance with a detailed proposal, and budget approved by the Technical Oversight Committee for the project.

907.02 Contract Administration. Upon approval of the projects, contracts or agreements for research projects are prepared and processed by the Research Engineer. Prior to execution of any legal agreement or contract, it must be submitted to the Chief Legal Counsel for concurrence as to form. Once the contract is signed and returned by the research organization, it must be executed by the Highway Division Chief Engineer or Department Director. The executed contract and notice to proceed are transmitted under the signature of the Chief of Administration or Deputy Director. Copies of all contracts shall be submitted to Internal Review for evaluation of financial accountability.

The Research Engineer shall review and approve all invoices submitted by outside research organizations. The chair of the Technical Oversight Committee shall review the progress report (DH 771) and act as the independent second reviewer of the invoice.

907.03 Coordination and Surveillance. The Technical Oversight Committee established for the project is responsible for the coordination and surveillance of the contractor's work. Coordination means the guidance of the contractor to keep the work directed along paths of potential benefit as set down in the proposal. Surveillance means monitoring of the work to assure it is in accordance with the terms of the contract with respect to level of effort, adherence to time schedule, conformance with the approved work plan and submittal of required reports. The Research Engineer will aid the responsible unit and oversight committee in administration of the project.

907.04 Equipment and Supplies. On state-funded projects, the entire cost of equipment rental for the period during which the equipment is used on that project is a legitimate project charge. When equipment is purchased, only the depreciation during the project period is an allowable project charge.

On federally supported projects, the same general requirements as for state projects are applicable with some additions. Allowable costs of equipment purchased as part of a research contract shall follow 49 CFR 18.32(b), and acquisition and disposition of supplies will be in accordance with 49 CFR 18.33.

The State shall also require certification that items of equipment, with a cost of more than $ 5,000, included in the contract as direct costs have been excluded from any of the indirect costs. The Federal Aid Policy Guide should be consulted when planning an FHWA supported research project requiring equipment purchase or rental.

The contract should spell out the details as to who purchases and who is to retain ownership of any specialized equipment required to complete the project.

SECTION 908.00 – PROJECT PROGRESS CONTROL

908.01 Project Suspension or Discontinuance. Criteria for suspending and/or discontinuing a project must consider whether the project has potentially any chance of success, priority of other work, personnel availability, etc. Projects shall not be suspended or discontinued voluntarily by a division, bureau, section, or district, but if the need exists, explanations and recommendations should be directed to the Research Engineer and Technical Oversight Committee (if one is set up for the project) for action.

908.02 Project Administration. Personnel assigned research tasks will remain under the administrative authority of the normal supervisors. Purchase of supplies, needed for the project will be handled as any other supply purchases. Special items needed for the research project shall be purchased by the section or district with the approval of responsible unit supervisor, the Research Engineer and/or the Technical Oversight Committee set up for the project. Salaries, wages, supplies, and equipment will be charged to the research project authority, unless instructions for other distribution are given by the Research Engineer or Chief of Operations.

The Technical Oversight Committee and/or the Research Engineer will review project costs, procedures, and purchases. The Research Engineer will be kept advised as to project needs.

23 CFR 420 will govern cost control records for the project when federal funds are involved.

908.03 Counseling and Coordination. All Department personnel are available for counseling and advice regarding research projects. The Division Heads, Bureau Chiefs, District Engineers or Section Supervisors and/or the Technical Oversight Committees assigned the project and the Research Engineer bear primary responsibility to counsel and advise the Principal Investigator.

Coordination of efforts between divisions, bureaus, sections and districts who may jointly pursue a project is to be the responsibility of the Division Heads, Bureau Chiefs, District Engineers and Section Supervisors involved together with the Research Engineer and the Technical Oversight Committee.

SECTION 920.00 – REPORTING

SECTION 921.00 – REPORT PROCESS

921.01 Introduction. The various research project reports provide means for implementing

research findings into operational policies or techniques as well as helping the research administrators and the FHWA to evaluate the progress of individual studies. They also indicate whether a study is sufficiently productive to warrant consideration.

The following types of research reports will be submitted:

- Initial or Construction Reports (Category 1 and 2 experimental features)
- Annual (Progress) Reports (Category 1 and 2 experimental features)
- Interim Reports
- Quarterly Progress Reports (contract research)
- Final Reports

Reports containing conclusions or recommendations (final and Interim reports) should contain a disclaimer statement as follows:

"The contents of this report reflect the views of the researchers and author(s), who are responsible for the facts and accuracy of the data presented. This report does not constitute a change in standard specifications, regulations or procedures."

This disclaimer for the Department may or may not be used at the discretion of the responsible unit. This disclaimer must be used on all FHWA funded research and should be used on all external contract research reports, and on internally produced reports which will be published.

921.02 Distribution. The Research Engineer will make distribution of reports. The distribution schedule normally includes the bureaus, sections, and districts within the division; the Planning Division; the 17 WASHTO states; the FHWA; Transportation Research Information Service (TRB); and other state transportation departments with which we exchange reports regularly. Final reports for FHWA funded projects (except Category 2) will also be distributed to FHWA Division Office (3), FHWA HRD-10 (5), the DOT Library (2), and NTIS (10) and the three TRISNET Repositories (2 each) with form NTIS-79. Enough reports will be printed to make them available to other states or agencies upon request. Category 2 reports are typically not distributed outside the Department and the FHWA.

921.03 Federal Approval. Final and interim reports on federal-aid projects may not be distributed outside the Department until the responsible federal agency has accepted the report. FHWA approval constitutes acceptance of such reports as evidence of work performed but does not imply endorsement of a report's findings or recommendations. This restriction also covers the presentation of research data or results in papers or at technical meetings. The Research Engineer will be responsible for obtaining federal acceptance of research reports.

Reports prepared with federal participation shall acknowledge this cooperation by including the name of the appropriate federal agency on the cover or title page. FHWA form DOT F 1700.7 shall be included in all federal-aid projects final and interim reports.

Reports prepared by agencies outside the Department will also contain a similar acknowledgment of cooperation with the Idaho Transportation Department.

921.04 Approval of State-Funded Projects. Reports of projects, which receive no federal aid, must be approved for publication by the Technical Oversight Committee and/or the Research Engineer. If the report is prepared by an organization outside the Department, acknowledgment of this cooperation shall include the Idaho Transportation Department on the cover or title page.

921.05 Updating TRIS. The Transportation Research information Service (TRIS) is the single most comprehensive file of literature on all subjects in the field of transportation. The Research Section will contribute to this data base by updating their projects in a timely manner.

Ongoing research activities will be reported quarterly to the TRIS database. The reporting will include the status of existing projects, significant changes to existing projects, the addition of new projects, the completion of projects and significant technology transfer activities.

SECTION 922.00 – TYPE AND DESCRIPTION OF REPORTS

922.01 Initial or Construction Reports. Initial or construction reports should cover the starting of a project. On construction projects, the report should include all the problems (specifications, materials, supply, handling, and installation) concerned with the project.

922.02 Annual Reports. An annual status or progress report shall show the status of the project with regard to the original project proposal and an outline of work proposed for the next year or period of study. Annual reports for experimental features in construction (Category 2) shall document the condition of the feature or subject of experimental procedure.

922.03 Interim Reports. An interim report should be prepared at any time a study develops findings that might be implemented by the Department prior to completion of the overall study or which might suggest or provide the basis for additional, meaningful research. Interim reports should contain any data or information, which will support the conclusions made.

922.04 Final Reports. The final report of a research project shall provide the link between the knowledge gained and the operational implementation of that knowledge. The most valid and important research findings will be of little value to the Department if they are not conveyed clearly and convincingly to the person having the operational responsibility for implementing these findings.

The final report should demonstrate the investigator actually accomplished what was planned in the research proposal or the problems, which prevented meeting these objectives.

922.05 Format. Reports and other documents for FHWA funded work awarded after August 22, 1994 must be in metric units.

For Category 1 and 2 projects, all reports except the final report may be in letter form. Include all available information; attach project diary sheets or other reports if necessary.

The format of the final report shall be discussed and approved by the Research Engineer prior to final submittal of the report. The format will normally follow the outline of a good technical report. However, since many people receiving the report will be more interested in the conclusions and recommendations than in the techniques of the research or the data, a summary presenting this information will usually be placed near the beginning of the report.

This format may be waived upon request. For instance, where a student is using the research project as the source of material for a Master's thesis, this format might not conform to that required by the

university. If revising the report format would constitute a major effort, approval may be granted to submit the report in the same format as the thesis so long as it meets all other requirements of the report.

The research organization shall submit t least five (5) copies of draft final reports to the Research Engineer for review and comment by the Technical Oversight Committee. Submittal of the final report shall consist of five (5) bound copies, one unbound, camera ready copy for reproduction purposes and 3.5 inch diskettes containing all text and figures Microsoft Word for Windows version 6.0 or later.

SECTION 950.0 – EVALUATION AND IMPLEMENTATION

SECTION 951.00 – EFFECTIVENESS

951.01 Project Level Effectiveness. The effectiveness of research accomplished should be rated upon completion of the project. Considerable mature judgment must be exercised and only guidelines can be set down. Divisions, bureaus, sections, and/or districts, which benefit from the research findings, should be requested to furnish comments and a critique of the findings or developments. These evaluations should be made as soon after publication as practicable.
The following are guidelines for evaluating research projects:

- Was the information or knowledge developed in accordance with the objectives of the project?
- Did equipment, methods, and/or procedures develop which appear to be satisfactory in accordance with project objectives?
- How effective was the research insofar as adoption of findings to productive use?
- Does the research open the door to further work holding promise of a “break through” in the area of effort?
- Did the research solve the problem, and can the findings be adopted as standards of the Department?
- Make an estimate of value to the Department, either money savings, time savings or improvement in process, for the first three (3) years after implementation of findings to reflect value of the research accomplished.

951.02 Program Performance. Evaluation of the Research Program will be done annually. Information on project level effectiveness will be of considerable importance in determining the overall effectiveness of the program. The evaluation shall focus on:

- Savings and benefits to the Department from implementation of research project results
- Adherence of projects to projected funding and projected schedules.

951.03 Peer Exchange. The purpose of peer exchange is to improve the quality of the research program by examination of the deliverables of the program. A panel, with knowledge of state research programs will bring that expertise on a periodic basis to a study of the research process and advance recommendations structured to enhance its performance.

The review team of at least two members may consist of representatives from the FHWA, universities, the Transportation Research Board, the private sector, other agencies and the research units of other states. At least two of the members will be chosen from a pre-approved list compiled by FHWA. If travel is required of the review team members, it may be charged against the SPR program at 100% federal funding.

SECTION 952.00 – IMPLEMENTATION

952.01 Implementation of Research Findings. The Research Engineer working through the Technical Oversight Committee for the research project and the Research Advisory Committee shall recommend implementation of research findings that will provide better techniques, methods, equipment, designs, materials, and operations. This applies to research findings of other departments and agencies as well as work within or contracted by the Department. The Research Engineer has been assigned the responsibility of assuring that proven results of research are effectively utilized. In order for this to be accomplished, each division, bureau, section, and district will be required to assist by reviewing and evaluating research findings pertinent to their operation.

Once a research task has been accomplished by the responsible unit or by an outside agency or organization under contract, the Research Engineer has an obligation to disseminate the results and to promote their implementation. In some cases, this can be done simply by distributing copies of the research results to potential users. In other instances, supplementary implementation data will have to be prepared and distributed. This may include, for example, additional photographs and drawings of modified or new equipment, or supplemental guidelines for revising design or construction procedures and practices.

Research findings from outside the Department will frequently be adaptable to our problems. In such cases, implementation may be complicated somewhat by concern that conditions in the Department are different from those in the agency where the research was done. In these instances, the Research Engineer has additional responsibility to seek out and distribute information regarding the applicability of the results.